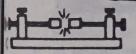
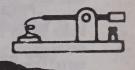
# Spark-Gap Times



Published By

The Old Old Timers Club



NOVEMBER-DECEMBER 1987

VOL. 24 No. 3

Happy Chanukah





MERRY

CHRISTMAS

AND A HAPPY NEW YEAR!

#### President Emeritus RAY E. MEYERS—W6MLZ

#### PRESIDENT L. F. HEITHECKER—W5EJ

#### VICE PRESIDENT

#### SECRETARY-TREASURER BERTF. AYERS—W6CL 20933 Brant Avenue Long Beach, CA 90810

#### **EDITOR**

A. J. GIRONDA, W2JE 1417 Stonybrook Ave Mamaroneck,NY 19543

H. W. Wills-W1DJ

Earl W. Korf-K2IC

Charles Dorian-W3JPT

R. O. Akre-W4ZZZ

J. L. Robertson-W50B

H. S. Gartsman-W6ATC

Leon Stanley-W7DKB

J. E. Hoffer-W8CWY

G. Lane Eldred-W9SG

R. Anderson-KØNL

#### DIRECTORS AT LARGE

DL3ME—G. Jacoby, Europe PY1AFA—Penna, S.A.

VK3YL - Austine Henry Australia

# Spark Cap Times CONTENTS

NOVEMBER-DECEMBER VOL. 24 No. 3
Presidents Message3-4
The Editor Speaks5
\$12 Club & Donations6
New Members & SK's
Known Birthdays
K7UGA Barry Speaks
PIPELINE, K2GCE10-11
Romance of Radio. W4NWF12-13
Zoning Suit14
MF Jubilee Certificate15
Revisiting the Old Days16-17
The All Red Line WAlSPM18
Kata Kona Code WA1SPM19
Henry AD20

SPARK GAP TIMES IS THE OFFICIAL PUBLICATION OF THE OLD OLD TIMERS CLUB. Published bi-monthly on the first day of every month; Feb-Apr-Jun-Aug-Oct and Dec. \$1.00 a copy. \$6.00 a year, dual address add \$1.00 to annual fee.

All correspondence concerning advertising, or circulation matters should be directed to OOTC, 20933Brant Avenue, Long Beach, CA 90810. Editorial matter send to

A.J. Gironda,

1417 Stonybrook Ave., Mamaroneck, NY 10543

#### President's Message

We are well into the Holiday Season as we are writing to you this last day or two of November. Having had the pleasure of visiting in England the past ten days, and walking literally miles, up and down steps to the underground, I'm a bit numb, and overwhelmed at the congestion of people on the streets in London, shopping for Christmas...and, after visiting the Tower of London, Westminster Abbey, The British Museum of Natural History, and so on, I stand in awe at the sense of continuity of the history of England. The British apparently very early understood the need to know where one comes from in order to have a feeling for where one is today.

OOTC is alive and well....we're doing better now after the crippling effects of losing Ray, W6MLZ and then Gus, W2JE needing to get away from the extensive work required to keep OOTC running - providing the service to its members that is expected and required. In the aftermath of the "double whammy" we stumbled, fell, tried to get up, but only partly succeeded. Bert, W6CL, came to our rescue and kept things going as well as possible until now, at the present time we've started to turn a corner. Gus is back, able to assemble, print and mail SGT...talk about "above and beyond"....and yours truly is now able to shoulder some of the work too, so that, in a pretty short time, we ought to get back to someplace near where we were a couple of years ago. There will be more on this in the next issue of SGT.

I want to report to you that we have received several nice gifts of material consisting of Operating manuals for the OOTC Library. Gifts have been coming in from time to time, and a complete list of what we have together with the donors will be printed in the next issue of SGT. As you know, we're looking for operating manuals, Instructions booklets, etc., for any type of electronic equipment that might have some use to amateurs. The purpose is to provide a copy, at the cost of duplicating, to anyone wanting or needing it. If you have such material, don't trash it, sent it to OOTC, in Irving, TX. We'll file it, and keep it as OOTC property.

There have been a number of OOTC on the air nets, maintained by the faithful OOTC members through the years. Now, I am going to make it a personal matter to check into some of these nets beginning right now. I want to urge you to do the same. If no more than a check-in just to let everyone know you are up and at 'em. Let's make the nets a real "must do" activity and bring the gang together. If you can't hear a net from your location, drop us a line, and at the same time offer to act as NCS in getting one going so that we can communicate. That's one thing we certainly know how to do - just gotta get at it.

#### President Emeritus RAY E. MEYERS—W6MLZ

#### PRESIDENT L. F. HEITHECKER—W5EJ

#### VICE PRESIDENT

#### SECRETARY-TREASURER BERTF. AYERS—W6CL 20933 Brant Avenue Long Beach, CA 90810

#### **EDITOR**

A. J. GIRONDA, W2JE 1417 Stonybrook Ave Mamaroneck, NY 19543 DIRECTORS:

H. W. Wills-W1DJ

Earl W. Korf-K2IC

Charles Dorian-W3JPT

R. O. Akre-W4ZZZ

J. L. Robertson-W50B

H. S. Gartsman-W6ATC

Leon Stanley-W7DKB

J. E. Hoffer-W8CWY

G. Lane Eldred-W9SG

R. Anderson-KØNL

#### DIRECTORS AT LARGE

DL3ME—G. Jacoby, Europe PY1AFA—Penna, S.A. VK3YL - Austine Henry Australia

# Spark Gap Times CONTENTS

NOVEMBER-DECEMBER VOL. 24 No. :
Presidents Message3-
The Editor Speaks
\$12 Club & Donations
New Members & SK's
Known Birthdays
K7UGA Barry Speaks
PIPELINE, K2GCE10-1
Romance of Radio. W4NWF12-1:
Zoning Suit
MF Jubilee Certificate1
Revisiting the Old Days16-17
The All Red Line WAlSPM18
Kata Kona Code WAlSPM19
Henry AD20

SPARK GAP TIMES IS THE OFFICIAL PUBLICATION OF THE OLD OLD TIMERS CLUB. Published bi-monthly on the first day of every month; Feb-Apr-Jun-Aug-Oct and Dec. \$1.00 a copy. \$6.00 a year, dual address add \$1.00 to annual fee.

All correspondence concerning advertising, or circulation matters should be directed to OOTC, 20933Brant Avenue, Long Beach, CA 90810. Editorial matter send to

A.J.Gironda,

1417 Stonybrook Ave., Mamaroneck, NY 10543

## The Old Old Timers Club

## REMEMBER WHEN

YOU WERE MUCH YOUNGER? RADIO WAS MUCH SIMPLER? EVERY HAM WAS A PIONEER?

### IF YOU DO, YOU SHOULD JOIN THE OOTC

COMMUNICA OR MILITA	TIONS AT LEAST 40	REERS" WHO BEGAN THEIR FIST 2-WAY YEARS AGO AS AN AMATEUR, COMMERCIAN NEED NOT HOLD A LICENSE NOW TO ERSHIP
ELSTERNATION OF THE		MES," A MAGAZINE DEDICATED AND THEIR INTERESTS.
GETS THE	REAL OLD TIMES	RS TOGETHER.
WILL MA	KE YOUR YOUTH	LIVE AGAIN FOR YOU.
Sustaining Fee, if des	ired	ite and Pin \$18.00 \$ 6.00 Times and Membership Services)
		Call
Address		Handle
~ 1		Zip
Date of first 2-way con	nmunication	
Nature of contact	Amateur	Commercial
	Military	Other
Call letters originally	used, if amateur	
Class of current license		Issue date
Date of first license		Call letters
Enclosed is my payment to cover: Membership		Charge (as checked)
Date	Sig	gned
March March	hio Will	= CALL W/6/PJT

Please, each of you who read SGT, try to get those OOTC members around you who don't read it, to subscribe, and keep up with what's going on. SGT is the glue that can and should keep us together, and the on the air nets just make the cement stronger. Incidentally, while in California recently, we received a wonderful gift of about 40 back issues of SGT from Ralph Cabanillas, Jr., W6IL. These we expect to bind into booklets by the year, to keep them clean and safe. The only problem is that we've had no less than three different sizes of booklet which makes the binding a bit of a problem.

You will all be happy to know that Gus, W2JE, was recognized by the Radio Club of America at its recent meeting in New York, raised to the grade of Fellow, and received his Certificate at the wonderful ceremony held annually by the Club. The committee who picked Gus for the Award knew what they were doing - when it comes to day in, day out working for amateur radio, no one has done more than Gus! Congratulations to a wonderful guy!

Merry Christmas, may your holidays be happy and may you have good health!

-Ted, W5EJ-

#### KNOWN FREQUENCIES AND TIMES WHEN ONE MAY FIND A FELLOW OOTC MEMBER

DAY	LOCAL	T U/T	FREQ	TYPE	CONTROL
Mon	1900	*0300	3555	W. Canada SOWP	VE7WZ/VE7RQ
Mon	1900	*0300	3530	OOTC	W3FYD
Wed	1200	*1700	14287	Handicappers	WA3GRD
Wed	1330	*1830	7035	QCWA	W4PI
Wed	2000	*0100	7035	Nat'1 QCWA	W2JBL/W9CV
Thur	1400	*1900	7230	NE OOTC SSB	W1DJ
Thur	1900	*2400	3840	Midwest OOTC	W9CV
Fri	1100	*1600	14115	Nat'l OOTC CW	W1HRO/W8CCN
Sat	1000	*1500	7040	NE SOWP	W3FX
Sun	0930	*1330	3917	Socal OOTC/QCWA	W6FQ
Sun	1600	*2100	14345	QCWA Net	W6FQ
Sun	1400	*1900	7247	OOTC Florida	W4NWY

Note - \*During National Daylight time advance sked one hour earlier

OOTC	ITEMS AVAILABLE FOR PURCHASE
OOTC	Pins\$3.00
COTC	50 yr & 60 yr pins\$3.50
OOTC	coat patches\$2.50
OOTC	stickers (logo) 100\$1.50
OOTC	50 yrs in Ham rdo. 100.\$2.00
COTC	certificates 50-60\$2.50
Auto	Decals\$1.00

# EDITOR'S PAGE

During the month of November I have had some interesting things happen to me. First on 12 of November the Founders chapter of QCWA set up a beautiful certificate and presented to me at a meeting making me the MAN OF THE YEAR. Then on November 20, W2JQS Harry drove to NYC to the New York Athletic Club, where the Radio Club of America honored me by presenting me with a beautiful plaque attesting that I was made a Fellow in the Club. So in my twilight years my fellow Hams want to honor me.

OOTC IS Alive and Well. Many letters received were worried about it, but nothing is wrong it was just that Bert W6CL was so overloaded with letters he just could not get around to answering the OT's. So I pitched in help ole Bert, by taking some of the load off his shoulders. Bert says he will answer letters to be sure but give him time.

Also received a cupple of letters berating me for not informing them that their subscription had expired. Guess I am getting forgetful, but I try to check each lable to see if I should notify the member that his subscription expires. So I probably missed a couple. But you can help me. Check the numbers after your call sign, if it is 10/87 or before it means that on the October issue your subscription expires. Help me out, check the numbers send in your subscription funds and be sure to get Spark Gap Times.

Be patient. You get the chicken by hatching the egg - not by smashing it open....

73 W2JE

#### Elizabeth Zandonini Honored

Over the years, the Foundation has presented a number of awards to deserving Amateurs in the Washington area. One that has been long over due was presented at the Gaithersburg Hamfest to the one and only Liz Zandonini - W3CDQ.

Liz is probably one of the best known Amateurs in the World. She has been operating consistently and almost every day for the past 64 years! She has been active in the Foundation since it began in 1957. She has been an Assistant Director of ARRL for many years. She is a past president of the YLRL. Active in QCWA, OOTC, AWA, Rock Creek Amateur Radio Assn., WAYLARC, and on and on and on!

Early in World War I, Liz took a National Radio course, hoping to do her part in the war effort and become a ship operator. She got her commercial license in 1917 but never got to sea. Instead, she found herself teaching code to hospitalized veterans at Fort Meade and Fort McHenry. In 1921 she went to work in the radio section at the National Bureau of Standards and worked at the first WWV. In 1922 she decided to get an Amateur Radio license. That was the beginning of her real gareer.

Living in an area that prohibits outdoor antennas, she has accomplished an impressive record of contacts using a multi-band dipole strung in the attic of her house. It is good ears and good operating practices that make up for the antenna limitations.

Now looking toward her 88th birthday on December 11, Liz looks back over 64 years of hamming with many fond memories. She has made thousands of friends through her operating activities and personal contacts. She has attended many conventions throughout the United States and has done a good deal of traveling in Europe. She has entertained innumerable Hams, and particularly foreign Amateurs, in her home and maintains a constant flow of "pen pal" correspondence to all corners of the globe. She has been too busy enjoying all of her activities to ever consider marriage.

W3CDQ is strictly a cw operator - and on a straight key!!! Some of the fellows finally talked her into buying a 2 meter hand-held a while back but it is a rare occasion when anyone hears her voice on the air.

Liz is, indeed, the Grand Dame of, Amateur Radio. We are delighted to see her honored by the Foundation for her years of activity and her dedication to Amateur Radio.

(by K4LMB)



W8WOJ Don has a very nice Radio Shack New and Old equipment

#### **NEW MEMBERS**

OOTC welcomes the following new members and appreciates the efforts of those responsible for sending them applications as indicated below:

#2751 Agnes Langevin W6MFP viaLen Yerger K6SS #2752 J.A.Masaharu Okochi Via W1GAY //P16JR

#2753 Akira Okada JJ1FSK via W1GAY

#### SILENT KEYS

W1BXZ Fred Stedman
W2PGS John H. Stone
W3WS Chas. F. Parcels
W4ADPFrank Hoselton
W5IPH Col. W. C. yder
W6DNG Willis Conkel
W6KQY Ernest Erwin

#### \$12 CLUB

Kudos to the following for sending in advance sustaining fees thus a savings to the Club by reducing the frequency of having Address-O-Graph plates made.

W9IPO Ed Webb\*\*\*
W3PEV George Favre
W8WOJ Don Christensen
W3MJO James Kennsinger

\*\*\*\$30 Club

DONATIONS
W9IPO Ed Webb \$5
Next issue wewill have a full
report of all above....

N6NA Marvin H. Smith W7BFI Erwin S. Shuler K7DI 'Dr. J. M. Martin W7IC George Onsum W9CFO ed R. Lange

We have a first thru Dunc Kreamer WIGAY who proposed for membership in OOTC two old timers from Japan. JP1BJR J A Masaharu Okochi OOTC #2752 and JJ1FSK Akira Okada OOTC #2752. We welcome them from across the sea.

#### KNOWN BIRTHDAYS

Greetings to the following OOTC Members who will be celebrating their birthdays shortly after receiving this issue of Spark Gap Times.

#### FOR FEBRUARY WE HAVE:

- ! W9GJ, W2BFI, DL2NAJ
- 2 W5KL, K4JZB
- 3 W2ALS, W8BXM, W8NWU, DL1JK
- 4 W2RQF, W6ATC, W1SK, K6VU
- 5 KC4XA, KL7DG
- 6 Bill Breniman, W1BC, N6FIS
- 8 NF8W, W7HTE
- 9 K7BN, K6QS
- 10 W2HAZ, K4GQ, K4NI, DL2KY
- 11 W1GJF, K4RF
- 12 K6BV, W6WT, W8EYS, W1EZR
- 13 KF4U,W4BK,W9GJS,K4LMB W6NKE
- 14 W3CKA, W2ANB, K4FKG, W5UY W6RG, W6ZMK
- 15 W7JY, K4ECK4EF, W3PEV, K8DHN
- 16 W9MG, W8BF, W5RA, W4JVR, W1EMN
- 17 W5JT, W6YES, WØDO
- 18 W9NN, K6HV, WØOEP, W1BY
- 19 W8JUL, K6HI
- 20 W8HM, D11ZQ
- 21 K4EME, W6MS, WA7DTX, W8SS KA8FXA
- 22 K4RE, W2RFY, W4FOM, DL7PM W4PEI, K4SV
- 23 W7DV, DL3ME
- 25 W3QN, W6QVK, DL1BT
- 26 WIACP VEISH
- 27 W1IAO, W5EEG, W6IL, WØGQN
- 28 WIBT WSEA C6ADY
- 29 W6EY, W1ES

#### FOR MARCH WE HAVE:

- 1 DL3JE, AA3Y, W8SDO, W6TZV, K5VKO
- 3 W6QHL, W7DH, W7ZH, W1BA
- 5 WA4UOE
- 6 W8BDY, W6OD
- 7 W1AAC, WØGFQ, W7CJ, WØDM, W6KJP
- 8 W2GT, W1AZP, W4COW
- 9 DL1YK, W3JZY, W6EB
  - 10 W1JY W2LDE
  - 12 W8AQ, W8ZLC, K4LC, W2YE, C6ANU
  - 13 N3ELB, W4ARE, W6CL
  - 14 W2GA, W1AVY, K4WR, K4JMH, DJ2SF
  - 15 W7AN, W5HLH, W5OTC
  - 16 WIBEH, W9MRT, DL2DMB
  - 17 W6TQ, W4CU, W6HUZ, K4QH
  - 18 LA7Q
- 19 W90D, KB3UK, W1LR, W9HW, W3BT W3QA, N6JSK, NX5T, W2QVC
- 20 WIVN, VE2NB
- 21 W3JZA, W6YN, W3FUM
- 22 W6CBX, W6CEF
- 23 K4BX, K4IV, K4JI, W7LLS, WW5U
- 25 W1ABE, W5BAK, W5HQA
- 26 W2VW, W6JFQ, W6PN
- 27 W2UV, W7PF, W8JO
- 28 W3DJD, W3LIV, KD8WP, DL1NP DL7AA
- 29 N4MG, W1EFW, ZS6AD, W6LDO, DL6TL
- 30 KH6CB, KH6CZ, W5FMO, W2ARO, W5ALS K6UYK
- 31 WA2DEW, W2YYN, W4BM, W6BYF, KH6GI W6KVT R.G. Middleton A991

No free government, or the blessings of liberty, can be preserved to any people but by a firm adherence to justice, moderation, temperance, frugality, and virtue, and by a frequent recurrence to fundamental principles.

Patrick Henry

Don't look for a now retired Barry M. Goldwater, K7UGA, to be able to fight ham radio's legislative battles alone anymore. That was a part of the message delivered by the former Republican Senator at the 1987 ARRL Southwestern Division Convention banquet on Saturday, September 10th. In his short but eloquent address, Senator Goldwater stressed that the best way to preserve amateur radio these days is for every ham to support the American Radio Relay League:

"I've served in Washington, as you know, for a long time and I tried to get myself interested in everything we could do in a legislative way or regulatory way to help the subject of communications including amateur radio. And, without the American Radio Relay League, folks, there just wouldn't have been anything. I could always depend on them. I get a little upset once in a while to hear people talking down on the ARRL; and I haven't read Wayne Green this month, yet. (audience laughter)

"It's a wonderful organization that deserves our active support. Not just sending in our dues, but [also] sending in our ideas and volunteering to do anything that the League wants us to do. I've watched it

grow through the years."

Senator Goldwater then went on to say that he has no idea what the future holds for ham radio. This, the result of recent legislative and legal decisions—decisions that he obviously takes exception with:

"I can only tell you as a former chairman of that Communications Subcommittee that I don't know what's going to happen to you from here on out. When I was chairman of that committee I never allowed legislation to go out except...positive to...amateur radio, but from the day that the dumb judge in Washington closed up AT&T, we've had nothing but trouble in the communications business. (applause)

"And now, of course, there's a big fight on between the different forms of television. Satellite television is having a hard time because they can't get programs because of copyright. [These are] copyrights that are owned by people that never had an interest in communicating with anybody. So, the whole subject of communications is going to take your active interest. Not just the interest of the League, but yours. When you hear something or see something that

you don't think is right, something that the League can help on, please get in touch with them. And please get in touch with your congressmen and senators. I'm no longer a senator, so you don't have to call me."

Goldwater also had high praise for a recent joint venture of the ARRL and the ham industry. The videotape titled "The New World Of Amateur Radio" in which he played

a key, on-screen role:

"I just got my copy of the new ARRL film, and if you haven't seen it, you have missed it! I wish we had figured on showing it here. It's a wonderful picture. It's a wonderful story and I think it's going to do amateur radio and the whole communications business a lot of good."

Barry concluded his remarks by once again attesting to the importance of ham radio in his life: "I'm so proud of being a ham, and I continue to tell you what I've told you in the past. I don't call it a hobby. I know it is a hobby in a way, but I like to think of amateur radio as a service. And, when I think of the things [that have taken place] and when I can look around this audience tonight and see what the men and women [of amateur radio] have done to help other people... I know it's a wonderful service ... I will continue to be an amateur radio operator until they dig a hole and dump me in." (Transcribed from a tape of K7UGA's speech to the ARRL Southwestern Division convention banquet in Scottsdale, Arizona on October 10, 1987.)

AT THE SAME BANQUET, Westlink Report's 1987 Young Ham of the Year David Rosenman, KA9PMK, received his award from Westlink Report Publisher Burt Hicks, WB6MQV. Rosenman impressed the assembled hams when his many achievements at such a young age were recited (see WLR-507). Senator Goldwater was moved to invite the newest ambassador for amateur radio and his family to his home for a tour of the world famous K7UGA facilities.

Westlink Report expresses its thanks to Chip Margelli, K7JA, and the Yaesu USA organization for their support of this award and the presentation of an FT-757 transceiver to KA9PMK. Next year's Young Ham of the Year will be awarded at the ARRL National Convention in Portland, Oregon.

(From Westlink report)

Ted's wife was dyeing a bedspread blue when one of their lambs fell into the vat. A passing motorist spotted the lambe and bought it. s0 — the Texan began to dye his other lambs all colors and sell them. Today, Ted sed, "I'm the biggest lamb dyer in Texas."

### PIPELINE

Edited by "BiLL"
William R. Miller, K2GCE
217 Porterfield Place
Freeport, NY 11520

It is good to have Uncle Gus back with us again helping Bert Ayers, W6CL, with editing the SGT and various other sundry chores. I am quite sure that Bert appreciated the help as his job has enough headaches to start with. Thank you both for your dedication to OOTC. While on the subject of headaches, fellows, Bert has mail piled so high it is going to take him a while to get caught up, so if you have sent him anything, please be patient with him.

On June 20th Art Ericson, W1NF, celebrated his 93rd birthday and also he has been a ham for 84 years...read on. He spent seven years, 1910-1917, working for Marconi as a commercial operator and 13 months in the Navy during WW-I as a Chief radioman. Need more be said except WOW and congrats, Art.

Several pieces of mail have been received by Ted and Gus that bring up a point that I think we all should be mindful of. The younger 'breed' of hams today has very little if any regard for the past accomplishments of we "Oldsters". What Bill Breniman did for the commercial boys in founding the Society of Wireless Pioneers I feel that we should give some very serious thought to perpetuating what the old-timers have contributed to ham radio. The Antique Wireless Association and the Old Old Timers Club are all dedicated to this principle, but it is all meaningless if we don't use the tools at our disposal....QST, 73, CQ and Ham Radio are what I have in mind. There must be some professional writers among this group that could write articles of this type for publication in those publications. Give it some thought fellows, for if we don't do more, all that we have accomplished over the years will be completely forgotten in the years to come.

There are many of us that receive a lot of enjoyment from sending birthday greetings to fellow-members which are gratefully received. Two of the dependables that I know of are Frank Galvin, W1DMH, and Dan MacDonald, W1PEX. As for the rest of us, why not give it a tryout - you'll find that it will make you feel great!

Irv Wolfe, W5RQH, is now living in Salunga, PA. He will be limited to 2-meter nets for a while and birthday greetings were passed to him via one of the nets in the area. Good luck in the new OTH, Irv

Ain't Nature Sly?

A doe can run 48 miles an hour; a buck, 49 miles and hour.

As SGT is sent to each member about the first of the month, Uncle Gus has given me a deadline of the 25th of the month preceding publication. For me to get my copy in by that date I will have to have your letters in hand by the first of the month. Example: copy for the February issue of SGT I will have to have in hand by lanuary first and so on. OK now, fellows, my mailman is a poor, tired little old guy, getting ready for retirement so have pity on him. Space your tid-bits out if you will please, but no matter how, lets have some articles so that I can keep this column going.

If any of you are getting ready to put a booth together for a hamfest, let Ted know, and I am sure that he will be only too happy to supply material for you to display. Drop him a line. It has often been mentioned in SGT to check your expiration date on the mailing label if you want to stay on the mailing list. It only takes a minute. Of course that goes for everyone except your writer who got so far behind that he forgot to take his own advice. Now he has missed about two copies of SGT and will have a new renewal date to worry about....guess we all can't be perfect!

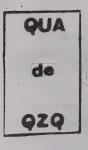
I want to thank both Gus and Ted for their help while I get settled into this new job. Between this assignment and being one of the V. P's in the SOWP, I find my time somewhat limited as far as spare time goes. They have sent me all the correspondence that they have received so far as PIPELINE is concerned, which has helped a whole lot. In the future, any items that you think that I may be able to use, just send it to me at the address at the heading of this column

Ed Green is now living in a retirement center in Ashtabula, OH. His complete address is now: Edward L. Green, W8QKY, 925 E 26th St, Ashtabula, OH 44004. In a card that he sent to Uncle Gus, he says that although he can no longer drive because of sight problems, he can still use the rig. They have allowed him to put up a ground-mounted antenna near his apartment. He has not got TVI as the cable is about 6 miles away. Thanks for the info, Ed!

Liz Zandonini, W3CDQ, sent Gus a note in which she says that she is till on 20 meter CW and enjoying every minute of it. She also sent a substantial gift...thanks, Liz.

By the time this sees the light of day, the QCWA National Convention will be history. Hopefully, many of you were able to attend, as I am sure that it was well worth the trouble!

In a letter to Gus, Joe Pavek, WOOEP, states that he has been very busy putting the new museum in shape. Was hoping to have it in operation by August 29th, but had to postpone the opening...m in a month or so...keep us posted, Joe!



# Romance of Radio 1914 to 1944

(Submitted by W4NWF)

By W. FRANKLIN COOK

N. R. I. Technical Consultant

1914 These were the "good old days"—when Radio was referred to as "wireless" most of the time-when only the stout-hearted dared walk into the room of a Radio fan and risk jarring the "cat's-whisker" off the long-soughtfor sensitive spot on the galena crystal-when tubes were so microphonic that a heavy footstep anywhere in a house sounded like Major Bowes' gong in the phones-when practically all broadcasts were in code, and many a tense midnight listener mistook static for voices from the moon or Mars, "Bloopers," those unforgettable regenerative receivers developed by De Forest in 1912 and Armstrong in 1914, were just becoming known among experimenters; these sets acted like miniature transmitters during the tuning process, causing howls in neighboring receivers for blocks around. Loudspeakers existed only in the dreams of inventors; listening was done with headphones, and crushed and aching ears were the reward for perseverance,

The two-element rectifier tube had been invented by Fleming in 1906, and De Forest had added a grid to this tube in 1909. Pickard had perfected the crystal detector in 1907, and it was for many years the most popular of all detectors. Of course, Marconi had in 1901 amazed the world by broadcasting the letter "S" from Poldhu, England, to Saint Johns, Newfoundland. Our own NAA in Arlington, Virginia, went on the air in 1913 with a 100 kw. spark transmitter operating on 6,000 meters. About this same time Nauen, Germany, began broadcasting on 16,900 meters or about 18,000 cycles (just above the audio hand), and station FL atop the Eiffel Tower in Paris began broadcasting on 10,000 meters. Many an old-timer still remembers tuning in these stations with a crystal set having huge tuning coils and an aerial hundreds of feet long. The Titanic had crashed into an iceberg in 1912, with Radio summoning assistance and bringing news of the disaster to a young wireless operator named David Sarnoff (now President of RCA) who was listening in a New York City skyscraper.

It was in 1914 that Hiram Percy Maxim founded the American Radio Relay League. War broke out in Europe this year, and amateur licenses were suspended in practically all foreign countries. American amateurs listened with suspicion to German Radio stations in this country and found at least one to be sending code reports on allied shipping to German submarines; recordings of the messages, turned over to the Secret Service, resulted in confiscation of this Telefunken station.

Broadcasting of enfertainment—even of grand opera with Caruso singing—was now several years old, with the De Forest Radio Telephone Company starting things off with phonograph records in 1907. Only a handful of experimenters heard these first "canned" programs, and these were more interested in DX (distant) code reception than in the highly distorted and almost unrecognizable music. Few people even dreamed of the vast entertainment possibilities of Radio during these days, and James E. Smith founded the National Radio Institute in this year primarily to train men for careers as wireless operators on land and sea.

1915 Human voices leaped across the Atlantic telephone conversation between radio operators at Arlington, Virginia, and the Effel Tower in Paris was also heard by listeners in Honolulu. More and more ships were being equipped with wireless, creating a demand for trained wireless operators. The ability of Radio to save lives at sea in time of disaster was demonstrated forcibly again and again.

1916 America was doing its best to keep out the sinking of the Lusitania by a German submarine in 1915. Wireless was adopted by the New York Police Department as a means of combatting crime. Across the seas, wireless telegraphy was made compulsory this year on all British vessels over 3,000 tons. Naval vessels of all countries were rapidly being equipped with wireless transmitters and receivers.

1917 America entered the World War. All amateur Radio enthusiasts pulled down their antennas and packed away their Radio apparatus in observance of a Government order. Many answered the Navy's call for volunteer wireless operators, and by the end of the war. over 3,500 American Radio Relay League members were in service as operators and Radio technicians. All activity in Radio during the war was concentrated in the various divisions of the Government and among Radio manufacturers who were making equipment for the Government.

1918 Radio played an important part in the activities of the U. S. Signal Corps in France, as well as in maneuvers of the U. S. Navy. Radio principles were applied to submarine-detecting apparatus for the first time. Radio technicians became an established unit of U. S. armed forces, doing all repair work on Radio apparatus. Tube manufacturers were making special hard (high-vacuum) tubes for the Navy, and somehow these tubes got out to the public shortly after the end of the war. Their superior performance doomed the former gaseous or "soft" tubes as amplifiers, although the soft detector was to reign supreme for some years to come.

1919 The war was over! All bans on Radio re-established as a hobby. Spark transmitters were being junked in favor of vacuum tube oscillators, and more and more hams gave up C. W. for phone operation. Scores of commercial wireless stations were built in this country; most of them used the famous Alexanderson alternator, which was simply a huge A.C. generator capable of producing A.C. powers up to 300 kw. at frequencies over 100 kc. These alternators fed power directly to the transmitting antenna.

It was during this year also that Dr. Frank Conrad of Westinghouse broadcast phonograph records over a home-made transmitter in his garage in Pittsburgh, getting an avalanche of fan mail and requests for favorite recordings. Westinghouse officials were amazed at this in terest in Radio.

1920 Westinghouse built its first transmitter in a little shack atop its nine-story factory in Pittsburgh. This station, eventually assigned the famous call letters KDKA, amazed the world with a broadcast of presidential election returns on November 2, 1920, followed by a report of Harding's election. Some two thousand newspapers began printing KDKA programs regularly; Radio was being acclaimed everywhere as the newest form of entertainment for the home, and receiver sales skyrocketed upward. Navy multi-range receivers left over from the World War were being sold to the public at this time, as also were receivers using honeycomb coils. "C" batteries made their appearance, pleasing the public because they cut down plate current and made "B" batteries last longer. Receiving tubes were hard to get, and cost anywhere from \$6 up. Radio experimenters spent about \$2,000,000 this year, not for complete sets but rather for parts with which to build their own crystal sets, small vacuum tube receivers, and transmitters. The first Armstrong superheterodyne circuit was announced, and amateurs immediately began experimenting with its circuit.

1921 Station WJZ at Newark went on the air and soon was broadcasting regular bedtime stories. The Dempsey-Carpentier prize fight broadcast made a hit; Radio had a sudden flurry of activity, with hardware, stationery, drug and even millinery stores selling commercial receivers or merchandising the handiwork of a

mechanically-minded son or kid brother. Horns with places for attaching headphones were of fered at \$10 and up; glass and wooden bowls were also widely used to boost the sound output of headphones and permit groups of persons to listen to programs. Attachments for holding phone units against the tone arms of phonographs were being sold this year.

Broadcasting stations were springing up like toadstools; while there were only 5 in December of the previous year, 532 more had gone on the air by September, 1922. More than 20,000 dealers rushed madly into this entrancing new field, and thousands more started manufacturing Radio apparatus. The majority of these received badly burned fingers toward the close of this year, when intense competition knocked the bottom out of prices. In New York, Chicago and elsewhere, cut-price Radio centers started up, offering the stocks of financially embarrassed and bankrupt Radio manufacturers at mere fractions of the original prices.

1922 WGY and WEAF went on the air, with WEAF making history by offering its facilities to advertisers. Major Armstrong announced his super-regenerative loop receiver, a 3-tube circuit which amplified signals over 100. 000 times with "nary a bloop or squeal." Magnavox came out with a deluxe electrodynamic horn type loudspeaker. The Hartley regenerative receiver circuit was popular with experimenters. Practically every high school student of the time had a crystal receiver and spent hours jiggling the little coil of wire called a "cat's-whisker," in order to get maximum power into the headphones. What a thrill it was in those days to clamp on the headphones, tune the receiver and scratch up the crystal for half an hour, then have the thrill of hearing a station 25 miles away!

1923 Neutrodynes took the country by storm. and soon you were a social outcast if you didn't have one. These sets didn't squeal. and you could actually get a station twice in succession at the same dial setting—sometimes! President Harding had one of these receivers installed in the White House. Other popular receiver circuits included regeneratives and ultradynes; popular tubes were the 201A's, the 171A's and the UV199 "peanut" tubes. Vacuum tube receivers had replaced crystal sets, except possibly among the high school experimenters. Loudspeakers had come to stay. Set manufacturers prided themselves on the assortment of knobs and gadgets which decorated receiver panels, but already the public was calling for a singleknob control. Women resented the unsightly batteries, and inventors worked day and night to find some means of operating receivers from ordinary light socket power. Radio receivers became obsolete in from three to six months during these days, with even the larger companies selling surplus stocks at half-price and lower to clear the shelves for new models.

Don't look for a now retired Barry M. Goldwater, K7UGA, to be able to fight ham radio's legislative battles alone anymore. That was a part of the message delivered by the former Republican Senator at the 1987 ARRL Southwestern Division Convention banquet on Saturday, September 10th. In his short but eloquent address, Senator Goldwater stressed that the best way to preserve amateur radio these days is for every ham to support the American Radio Relay League:

"I've served in Washington, as you know, for a long time and I tried to get myself interested in everything we could do in a legislative way or regulatory way to help the subject of communications including amateur radio. And, without the American Radio Relay League, folks, there just wouldn't have been anything. I could always depend on them. I get a little upset once in a while to hear people talking down on the ARRL; and I haven't read Wayne Green this month, yet. (audience laughter)

"It's a wonderful organization that deserves our active support. Not just sending in our dues, but [also] sending in our ideas and volunteering to do anything that the League wants us to do. I've watched it grow through the years."

Senator Goldwater then went on to say that he has no idea what the future holds for ham radio. This, the result of recent legislative and legal decisions—decisions that he obviously takes exception with:

"I can only tell you as a former chairman of that Communications Subcommitted that I don't know what's going to happen to you from here on out. When I was chairman of that committee I never allowed legislation to go out except...positive to...ama teur radio, but from the day that the dum judge in Washington closed up AT&T, we'v had nothing but trouble in the communications business. (applause)

"And now, of course, there's a big fight

"And now, of course, there's a big fight on between the different forms of television. Satellite television is having a hard time because they can't get programs because of copyright. [These are] copyrights that are owned by people that never had an interest in communicating with anybody. So, the whole subject of communications is going to take your active interest. Not just the interest of the League, but yours. When you hear something or see something that

you don't think is right, something that the League can help on, please get in touch with them. And please get in touch with your congressmen and senators. I'm no longer a senator, so you don't have to call me."

Goldwater also had high praise for a recent joint yenture of the ARRL and the ham industry. The videotape titled "The New World Of Amateur Radio" in which he played a key, on-screen role:

a key, on-screen role:

"I just got my copy of the new ARRL film, and if you haven't seen it, you have missed it! I wish we had figured on showing it here. It's a wonderful picture. It's a wonderful story and I think it's going to do amateur radio and the whole communications business a lot of good."

Barry concluded his remarks by once again attesting to the importance of ham radio in his life: "I'm so proud of being a ham, and I continue to tell you what I've told you in the past. I don't call it a hobby. I know it is a hobby in a way, but I like to think of amateur radio as a service. And, when I think of the things [that have taken place] and when I can look around this audience tonight and see what the men and women [of amateur radio] have done to help other people... I know it's a wonderful service ... I will continue to be an amateur radio operator until they dig a hole and dump me in." (Transcribed from a tape of K7UGA's speech to the ARRL Southwestern Division convention banquet in Scottsdale, Arizona on October 10, 1987.)

AT THE SAME BANQUET, Westlink Report's 1987 Young Ham of the Year David Rosenman, KA9PMK, received his award from Westlink Report Publisher Burt Hicks, WB6MQV. Rosenman impressed the assembled hams when his many achievements at such a young age were recited (see WLR-507). Senator Goldwater was moved to invite the newest ambassador for amateur radio and his family to his home for a tour of the world famous K7UGA facilities.

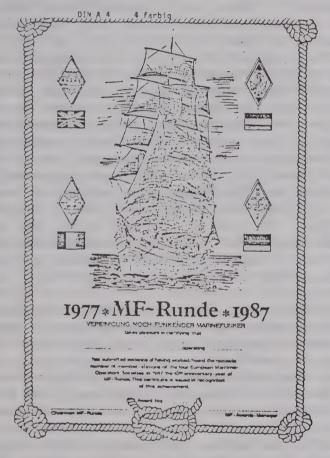
Westlink Report expresses its thanks to Chip Margelli, K7JA, and the Yaesu USA organization for their support of this award and the presentation of an FT-757 transceiver to KA9PMK. Next year's Young Ham of the Year will be awarded at the ARRL National Convention in Portland, Oregon.

(From Westlink report)

The time it takes for an average train to pass the average crossing is 14 seconds -whether your car is on it or not.

All QSOs must take place after January 1, 1987 and must consist of contacts with Marine Operators belonging to RNARS (English), MF-Runde (Germany), INORC (Italy), and MARAC (Holland).

The certificate is in four colors and a total 25 contacts in CW must be worked. Applications must be signed by 2 amateurs other than the applicant. Cost is 4 dollars or 6 IRCs. QSL cards need not be sent. For information write: Kurt Wuestner, DE1KWD, P.O. Box 25, D-4600 Dortmund 1, West Germany. The picture on the certificate is one of the tall ships.



INFO ON THE "MF RUNDE-- Jubilee Certificate.
MF Runde means MF Roundtable and the MF stand for
"Marine Funker" Navy Radio Ops who are still hamming. W8LZV has received two plaques from them,
silver and gold - the trophy (a ships bell) and
lately the super trophy (a ship's brass clock)
About 90% of the contacts were on CW on 20 mts.
They are usually found about 14050 kHz. Thought
some of the gang might be interested. MF members
may be found in several countries including the
USA and Canada, as long as they were ship ops in
their own Navy.

#### REVISITING THE OLD DAYS

Alton B. Fisher, N1CTA
14 Temple St, #5E, Framingham, MA 01701

In the summer of 1920 there were 3 boys, ages 13-14, living in the Sherwood Park section of Yonkers, NY, and interested in wireless communication. We had crystal receiving sets and were struggling with learning the code. There names were: Herbert Nordholm/OOTC#2461; Roger Gilbert (now deceased), and myself, Alton Fisher/OOTC#2520. At this same time Gilson V. Willets, one of the founders of VWOA, was recuperating from a medical operation in the same neighborhood and heard about the interest of these boys in wireless. He arranged to meet us and offered to teach us the code, which we enthusiastically accepted. Within a few days we could each copy and send at about 10 wpm. Gilson Willets was Merchant Marine Wireless Operator and told us about his interesting life. The three boys shortly thereafter went on the air using Ford spark coils and our galena crystal receiving equipment using the self-assigned calls HVN; RMG and ABF. Our transmit range was about 1 mile. We gained some proficiency and later that year, Herbie Nordholm obtained a proper license with the call 2BHI, and I received the call 2BGD. I kept in touch with Rex Willets and he subsequently invited my father and I to visit him on the old Fall River Liner SS Priscilla/KXI, docked in New York. He took us on a tour of the ship of course including the Radio Room, with a demonstration of its' open quenched spark gap transmitter. I was very favorably impressed and decided I would become a commercial wireless operator, which I did.

During the following years, while still attending school, I gradually upgraded my ham equipment, going through the stages of Audiotrons, Radiotrons, variometers, spark transformers from 1/4kW Acme, Benwood Rotary Spark Gaps, Murdock molded mica to glass plate in oil capacitors, OTs, etc. Summer vacations I worked in various ROVA radio stores in NYC, including Fulton St (Old Electro Importing Store), Cedar St., 149 St and Mt, Vernon. With my spark equipment I worked hams within a radius of about 300 miles at night in the winter. We were licensed to use any frequency below 200 meters! Then the popularity of listening to radio broadcasting caused silent periods and soon the demise of spark equipment. Then I went to CW operation.

I kept in touch with Rex Willets for several years. He went from the SS Priscilla to WCI, Newport, RI. Then entered the technical field of radio broadcasting in NYC. We lost track of each other. I graduated from the original RCA Institute in 1927, and my first ship was the SS Lake Ellithorpe/KOFM, 2kW navy standard spark and my own honeycomb receiver (the ship's receiver was almost useless). I stayed on that ship 11 years and was service rated by the Captain as a "Very Satisfactory" radio operator. I then went ashore at NYC as a radio technician for one and a half years. That job became boring so I resigned and joined Tropical Radio Telegraph Company and sailed on several United Fruit

Ships as Radio Operator. Because of my technical training and experience in servicing radio equipment, I became an Assistant Radio Inspector for TRT at NYC. In 1931, TRT built a new and larger radiotelegraph station WBF (Boston Marine) at Hingham, MA., with point service to all United Fruits operations in Central America. I was then transferred from NYC to Hingham, as Chief Electrician/Technician and also the TRT RI for Boston based United Fruit ships. During this period I attended MIT and became a qualified Electrical Engineer. WBF became a major east coast radio telegraph station with 20 kW on 500, 436 and 147 kHz. We were the first east coast marine station with crystal control on 500 kHz and below. All of their equipment was updated by the latest state-of-the-art techniques and after about 1938, all equipment was operating very well, requiring only routine attention.

With the onset of WW-II, WBF and the point-point services were drastically reduced. Traffic to ships at sea was held to an absolute minimum and those messages transmitted "blind" at certain scheduled times. Ships could not respond or acknowledge receipt as their position could then be determined by the enemy. Security fences and floodlights were installed around both the transmitter plant and receiving station buildings. There were 38 calibre revolvers provided in case of "trouble". I was too old by military standards for active service and also handicapped by wearing eyeglasses for vision correction....so, I contacted Raytheon Company and was immediately hired as an electrical design engineer and assigned to the then new Radar Program.

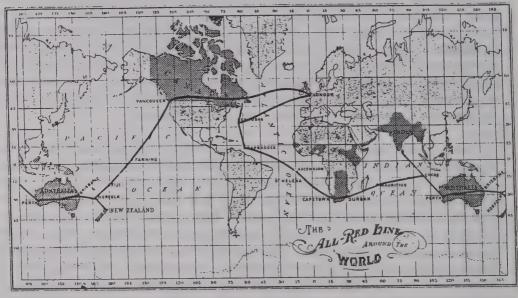
I worked for Raytheon 29 years on many interesting and challenging equipments. Almost entirely involving Radar transmitters, modulators, associated high-voltage power supplies and control circuits. Did some work related travelling within the USA and spend some periods of time with equipments near New Orleans, El Paso and San Francisco. Retired in 1971 to Cape Cod, but had to return to the Boston area in 1979 because of health problems. My wife and I have travelled about the world quite extensively on vacations. When going by ship, my first priority after boarding was to visit the radio room! I held a first class radiotelegraph license with endorsements continuously from 1927 until 1979, when there did not seem to be any good reason for further renewal and I let it expire. This proved to be a mistake when I again became interested in Ham Radio in 1983, and had to start over again except I was given credit for the code. I had a CW ham station WIKEH, in South Weymouth, MA, from 1936 through 1941 and then was off the air for 42 vears.

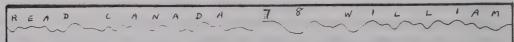
Going back to my radio God-father, Rex Willets...in 1967, I learned that he was retired and living near the Russian River, about 60 miles north of San Francisco. He had been living in the San Francisco area since 1929, working at RCA's KPH and at broadcast stations in that area. I had made 4 trips into San Francisco in 1930, as a shipboard radio operator and had no idea he was out there. Also, I had spent most of 1966, at Palo Alto with Raytheon. So, on a business trip to San Francisco in 1967, I contacted him,. We met after 47 years and had a cont'd on page 19

#### THE ALL-RED LINE D. K. deNeuf WAISPM

Canada's Sir Sanford Fleming, Chief Engineer of the Canadian Pacific Ra ilroad was commonly known as "that veteran pioneer of cable (submarine telegraph) reform". To him is given the credit for the successful promulgation in 1902 of the Pacific Cable Project which coupled Australia and New Zealand with Canada via Fanning Island, Fiji, and Norfolk. The long cable was owned by six different "British Governments". (Canada was already joined with England by submarine cable).

Another Canadian, George Johnson wrote a book in 1903 projecting a state-owned expansion of the Pacific Cable into an "Empire-Girdling Telegraph System" around the world, which he called "THE ALL-RED LINE". In the final chapter entitled "Wake Up" he alleges the average Englishman's mind is "slow and impervious to new ideas".... "he is practically asleep to the concerns of the great outer empire". A map of his proposed circuit route is shown below.





Typical siphon recording of signals received over long submarine cable.

#### Unrecorded History -

For 34 days the Ark floated on the flood waters, and then — it sprung a leak! Not a big leak, mind you, but an annoying one. Looking about for something to stop the leak, Noah spotted the dog's nose. So for two days, faithful Rover used his nose as a cork. Then the hole got larger, so Noah called his wife and she sat with her feet over the hole for the next two days. Again the break spread, and, in desparation, Noah sat over the hole until the Ark came to rest on the mountain AND THIS, GENTLE READER, is why dogs have cold noses...women have cold feet, and men always stand with their backs to a fire.

#### KATA KANA KODE ON A KEYBOARD D. K. deneuf Walspm

Probably I have a copy of most codes and keyboards which have been used over the globe in the past hundredyears but I never knew that the Underwood Typewriter Co. made a mill with Japanese Kana characters in WW2 called an RIP-5. Paul Dane, Executive Secretary of the Society of Wireless Pioneers was in one of the outfits during the war which intercepted Japanese transmissions. The operators had to be proficient in both the International code and Japanese Kana code. He is one of the few members of the US Naval Cryptographic Veterans Association who owns his own RIP-5 machine. He says that the RIP-5 keyboard looks like this (lower case is on top):

		E.	KO		N		TE	KI		SE		SU		NO		TO		MI	١	¥1
	NE	Y	1	HE		NA	N	NJ.	ΚE		U		10		RE		TU		A	\$0
	I	R	A	НО		TI	F	li .	NU		WO		WA		KA		SA	1	RU	H
		FU	MA		Ni		KU -	· HA		TA		YO		YU		MO		SI	3	Æ
	1	- 2	)	3		4		 5	6	,	7		8		9		Ø	-	0	
Q		w <sup>'</sup>																		)
A		S	Đ		F		G	Н		J		K		L				RO	.!	/

Note the two diacritical signals:

indicating semi-hard sound on preceding letter - example HA becomes BA, sent as two dots in Morse. (Negori).

• indicating hard sound on preceding letter example HO becomes PO, sent as signal ..--. in Morse. (Hanagori).



A P to	E A W
z 1.6	E t u
ひ ウ 5	7 3
I I L	E . ^ ^
0 オ お	10 木线
x y L	M 7 \$
エー・・ カ ガ	NI 5 %
¥ * *	100 - 4 to
ॼ … ク 〈	112 メ め
KB 7 H	160 -··- € A
S C OX	IA 4 0
St # *	(r)z 1 6
SHI り し	10 I
SU 7 \$	(Y) = I À
83 、セ せ	10 - 3 4
so 2	M 5 3
14 9 K	1 - 1 h
шт· <i>Ŧ З</i>	= JU 3
TSU 9 5	128 レネ
250 テモ	то в 3
20 1. &	14 ワ书
14 + th	(V) = 中 る
11 = K	(٧)
10 N 60	(W) B P 3
12 木 本	(V)0 7 B
20 / 0	
2	

The Kata Kana Code. The characters in the right hand column are the cursive type. Numerals use the Int'l Morse signals. In non-telecommunications, Kanji (Chinese) characters representing an entire word or idea are often employed especially for foreign words or phrases.

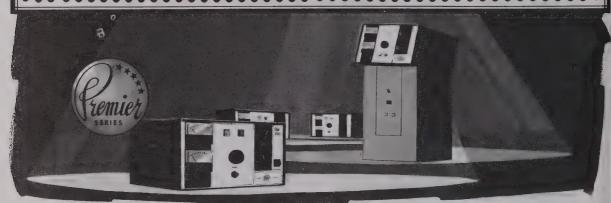
REVISITING THE OLD DAYS (cont'd) fine visit. We saw each other several times after that until our last visit in 1973. We corresponded until 1975, when he passed away. He was a very interesting person and certainly influenced my choice of life work. He was also one of the very early members of SOWP.

I hope you have found this rambling epistle interesting. I have enjoyed reminiscing back through 67 years of my life. My wife and I now have serious health problems. We are both in our 80's and a medical doctor's opinions are that we each have less than one year let We have had good lives and no serious regrets. My best wishes to you al, and I hope OOTC continues for many years

19



# ANNOUNCING A NEW LINE OF SUPER STARS..HENRY RADIO'S PREMIER SERIES



HENRY RADIO'S NEW PREMIER SERIES . . . AMPLIFIERS FOR THE DISCRIMINATING AMATEUR WHO REFUSES TO COMPROMISE . . . THE 3K PREMIER AND 3KD PREMIER DELUXE AMPLIFIERS. ALL OF THE MATCHLESS QUALITY AND FEATURES OF THEIR PREDECESSORS PLUS QSK BREAK-IN KEY AND 160 METER BAND.

#### THE PREMIER SERIES

- The 3K Premier Console --- all the rugged reliability of the 3K Console plus QSK and the 160 meter band.
- The 3KD Premier Desk Model --- the same RF deck in a smaller and lighter configuration.
- The 3002-A Console --- maximum legal power in a two meter block buster.
- The 3004-A Console --- a unique new approach to high power UHF amplification at 440 MHz.

Attention: All HF amplifiers can be modified for 10 meters • All export HF amplifiers are shipped with 10 meter operation included • Please call or write for a complete information packet

FCC type acceptance pending on 3K Premier and 3KD Premier models.

Henry amateur amplifiers are available from select dealers throughout the U.S. and are being exported to amateurs all over the world. Henry Radio also offers a broad line of commercial FCC type accepted amplifiers for two way FM communications to 500 MHz, as well as special RF power generators for industrial and scientific users. Call or write Ted Shannon for full information.

We stock these plus many other fine names:
AEA + ARCO + ARRL + ASTRON + B & K + B & W + BIRD + CDE + CONNECTSYSTEMS + CUSHCRAFT + EIMAC + HAL + HUSTLER + HY-GAIN + ICOM
+ KENWOOD + LARSEN + NYE + TEMPO + VIBROPLEX + YAESU

#### THE CLASSIC LINE

(Still available as before)

**2KD Classic Desk Model** ---3.5 – 21.5 MHz. (Two 3-500-Z tubes---the design Henry made famous)

**2K Classic Console** — the original and still the standard workhorse.

**2K Classic "X" Console** --- made heavy duty, rugged and reliable for a lifetime of service.

**3K Classic Console** with the magnificent 3CX1200A7 final tube.

2002-A...a two-meter desk model using the Eimac 3CX800A7... because this tube is rated at a 15dB gain, only about 25 watts drive is required for full output.

2004-A UHF desk model.

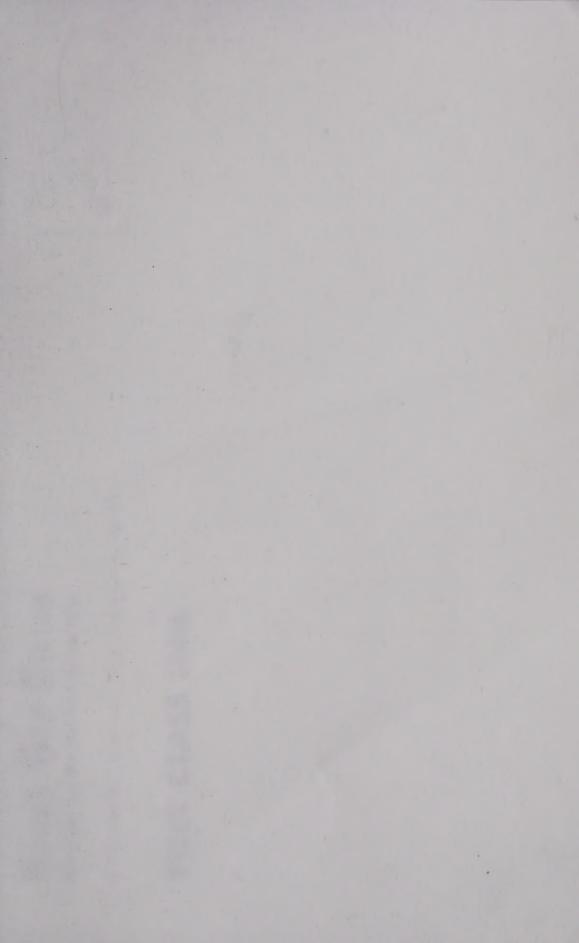


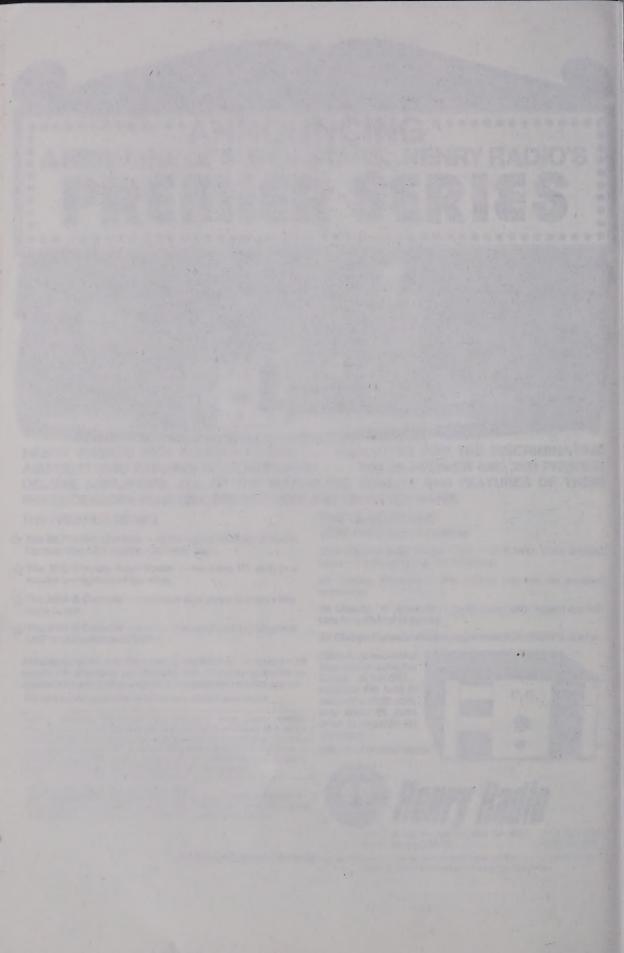


2050 S. Bundy Dr., Los Angeles, CA 90025 (213) 820-1234 Butler, Missouri 64730 (816) 679-3127

TOLL FREE ORDER NUMBER: [800] 421-6631 For all states except California Calif. residents please call collect on our regular numbers

Telex: 67-3625 (Henradio) FAX (213) 826-7790





# Spark Gap Timers Qub

20933 Brant Avenue, Long Beach CA 90810

# FIRST CLASS MAIL

FIRST CLASS MAIL
Postage Paid
Permit No. 73
Mamaroneck, NY 10543

HIREL GIVES WHAT

20933 Brant Avenue, Look beach CA 30

Shirty Control Office Control

The star Toler